Analysis of a class of conjugate gradient methods

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Abstract

In this paper we analyze a class of conjugate gradient methods. We consider the generalization of the method given in [1], and we get a whole class of new methods.

The conjugate gradient parameter β_k is chosen in such a way that it is always nonnegative. Under the Wolfe * line search conditions, the sufficient descent always holds for each single method from this class. The global convergence of each method from this class is considered.

Keywords: Conjugate gradient method, Conjugate gradient parameter, Wolfe * line search.

References

1. Xiangfei Yang, Zhijun Luo, and Xiaoyu Dai, *A Global Convergence of LS-CD Hybrid Conjugate Gradient Method*, Hindawi Publishing Corporation Advances in Numerical Analysis Volume 2013, Article ID 517452, 5 pages http://dx.doi.org/10.1155/2013/517452.